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**PHOTOGRAPHIC
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REPORT**

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**DEVELOPMENTS IN SHANTUNG PROVINCE
CHINA**



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DEVELOPMENTS IN SHANTUNG PROVINCE, CHINA

ABSTRACT

1. This report reviews major developments observed in Shantung Province on photography of January and February 1972. It consists of text, five maps, three tables, and seven photographs.

INTRODUCTION

2. Shantung Province is located on the Yellow Sea coast of northeast China and consists of the Shantung Peninsula, a mountainous promontory which separates the Po-hai Gulf from the Yellow Sea, and a portion of the Yellow River plain west of the peninsula.

3. This report provides a summary of major developments in missile, air, naval, electronics, ground forces, industrial, and underground construction activity in Shantung Province observed on photography [redacted] 25X1
[redacted] The entire province was covered by photography during that time. Tables and maps 25X1 are used to detail activity observed.

BASIC DESCRIPTION

Missile Activity (Figure 1)

Surface-to-Surface Missiles

4. No new surface-to-surface missile (SSM) activity or developments were observed at I-tu SSM Training School [redacted] or anywhere else in Shantung Province on the 25X1 January and February photography. Medium-range ballistic missile and short-range ballistic missile equipment [redacted] high possible missile service 25X1 tower have been previously observed at the I-tu facility.

Surface-to-Air Missiles

5. Three surface-to-air missile (SAM) sites were observed occupied [redacted] 25X1
[redacted] The launch area at Yen-tai SAM Site C30-1 [redacted] contained five probable 25X1 CSA-1 launchers [redacted] The launch area at Wei-hai SAM Site C11-1 [redacted] 25X1 [redacted] contained six launchers [redacted] two probable CSA-1 missiles 25X1 were on launchers and a possible CSA-1 missile was in the support area. The launch area at Lai-vang SAM Site A36-1 [redacted] contained four CSA-1 launchers [redacted] 25X1
[redacted] A modification of the tracking and guidance radar was observed at the central 25X1 guidance area of this site (Figure 2). A rectangular framework was mounted above the horizontal trough reflector. This is the first time this modification has been observed at a deployed site. Similar framework was observed on radars at Shuang-cheng-tzu SAM Launch Area B [redacted] 25X1
6. Ching-tao Probable SAM Support Facility [redacted] was newly identified 25X1 at 36-06-53N 120-21-55E. One probable CSA-1 missile canister transporter was in the storage area [redacted] 25X1

Shipborne Cruise Missiles

7. One naval-launched missile system is operational at North Sea Fleet installations in Shantung Province. The CSS-N-1 (STYX) antiship cruise missile is used on launchers aboard Gordyy guided-missile destroyers (DDGS), Osa guided-missile patrol boats (PTFG), and Komar and Hoku small guided-missile patrol boats (PTG).

8. Two facilities on the Shantung Peninsula coast support DDGS. A Gordyy DDGS was observed at Chiang-ko-chuang Naval Facility [redacted] for the first time on 25X1 photography of [redacted] Gordyy DDGS have been previously observed at Ching- 25X1 tao Naval Base [redacted] (Continued p. 5) 25X1

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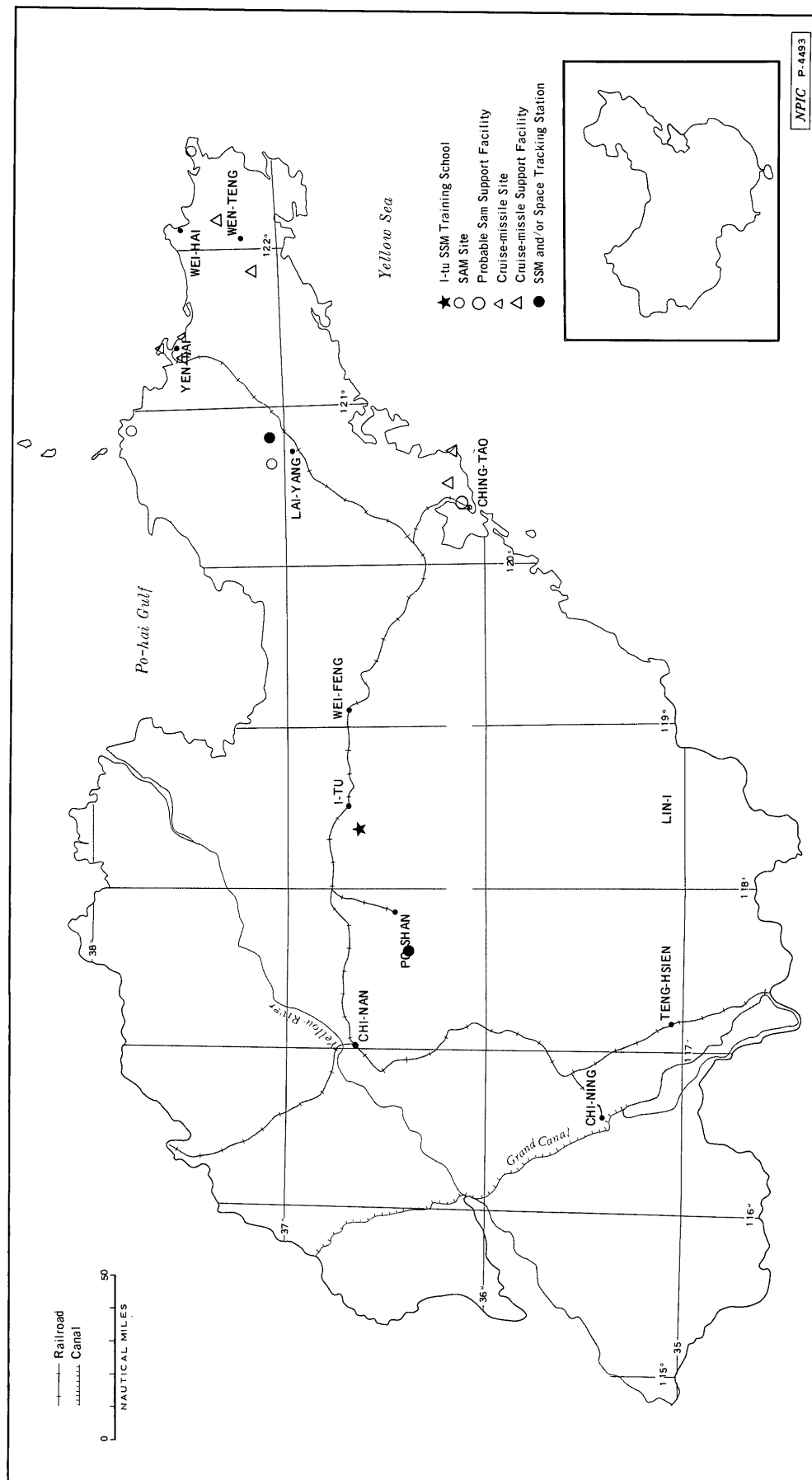
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FIGURE 1. MISSILE ACTIVITY IN SHANTUNG PROVINCE, CHINA

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9. PTFG were observed based at two facilities near Ching-tao. Four Osa PTFG were observed at Ling-shan-wei Motor Torpedo Boat Base [redacted] 15 nautical miles (nm) southwest of Ching-tao, for the first time on photography [redacted] Seven other Osa PTFG were observed at Ching-shan PUG Naval Facility [redacted] 19 nm northeast of Ching-tao, on photography [redacted] (Figure 3). Komar and Hoku PTG as well as Osa PTFG have been previously observed at Ching-shan.

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10. Naval cruise-missile support areas were newly identified near Ching-shan PUG Naval Facility and Chiang-ko-chuang Naval Facility [redacted] Ten STYX crates [redacted] were at the newly identified Ching-shan Naval Cruise Missile Support Facility [redacted]

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Land-based Cruise Missiles

11. Two short-range SSM systems have been observed at coastal defense sites and at support areas near the coast of the Shantung Peninsula. The older CSS-C-1 (SAMLET) cruise-missile system has been observed at Yen-tai and at a cruise-missile support area near Wei-hai. The coastal defense version of the STYX cruise-missile system, using the CSS-N-1 naval STYX airframe or an elongated STYX variant airframe, has been observed at Yen-tai and at a cruise-missile support area near Wen-teng.

12. Probable SAMLET launchers [redacted] have been previously observed at Yen-tai Cruise-Missile Launch Site [redacted] and at Wei-hai Cruise-Missile Support Facility [redacted]. A SAMLET missile was observed being transferred from a transporter to a launcher at Wei-hai Cruise-Missile Support Facility on [redacted]

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13. Probable STYX launchers [redacted] have been previously observed at Yen-tai Cruise Missile Support Facility [redacted] at Yen-tai Coastal Defense Site 2 [redacted], and at Wen-teng Cruise-Missile Support Facility [redacted]. Four probable STYX launchers were observed at Yen-tai Cruise-Missile Support Facility, eight were observed at Yen-tai Coastal Defense Site 2, and four were observed at Wen-teng Cruise-Missile Support Facility [redacted]

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Air Activity (Figure 5)

15. Shantung Province comprises a major part of the Chi-nan Air Defense District and contains a large number of naval air elements. Sixteen airfields and one seaplane station have been identified in the province. Twelve of the airfields have permanent hard-surface runways more than 1,829 meters (6,000 feet) long. Table 1 (keyed to Figure 5) details the status of the airfields and the air activity observed on the January and February 1972 photography.

16. F-9 aircraft were observed at Kao-mi Airfield [redacted] for the first time on [redacted]. Aircraft were observed at 13 of the 16 airfields and at the seaplane station. One BEAGLE bomber was observed in flight at Lai-yang Airfield [redacted] and one FAGOT fighter was observed in flight at Kao-mi Airfield [redacted]. More FAGOT/FRESCO fighters were observed than any other type of aircraft. (Continued p. 10)

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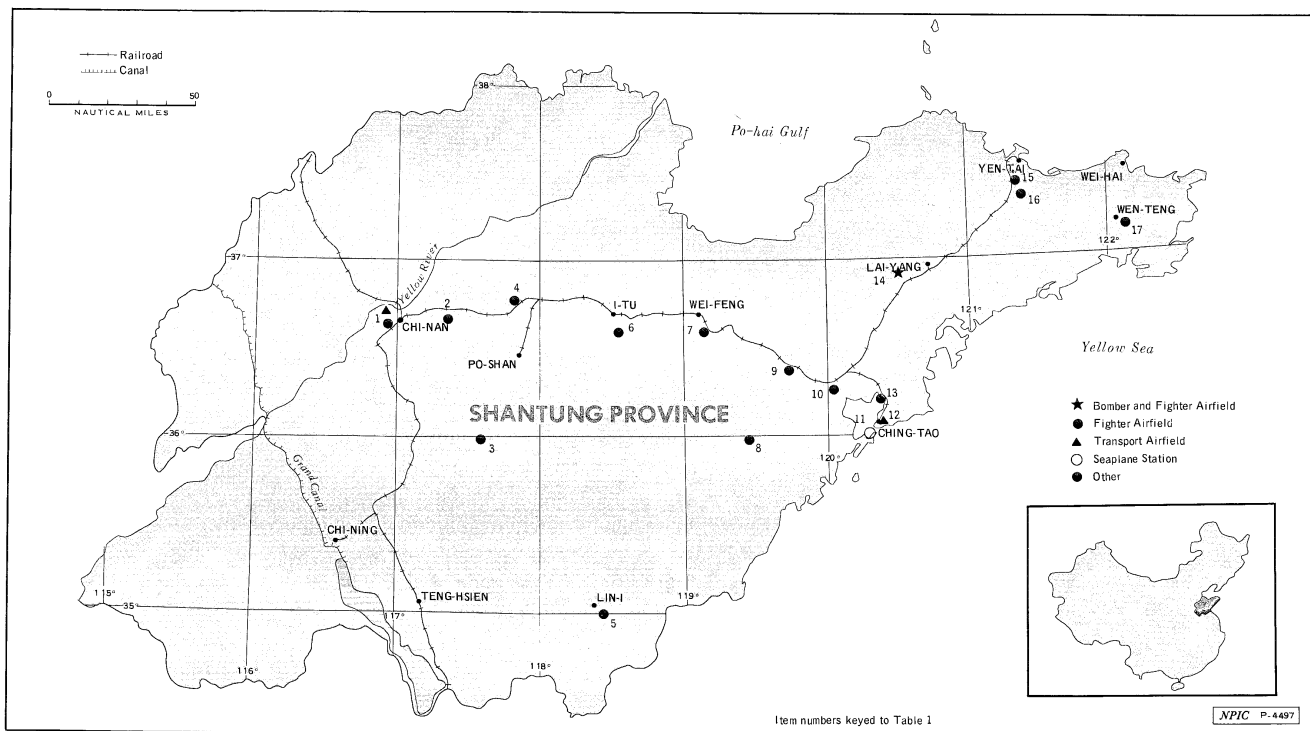


FIGURE 5. AIR ACTIVITY IN SHANTUNG PROVINCE, CHINA

Table 1. Air Activity In Shantung Province, China
(January - February 1972)

Item No	Installation	Type of Airfield	Description Meters Feet	Aircraft Observed on Man KH 1202	Remarks
1	Chi-nan Airfield 36-40-40N 116-55-12E	Fighter/Transport	2,195 x 64 -- north/south 7,200 x 210 concrete runway 1,524 x 107 -- NE/SW 5,000 x 350 prepared surface runway	35 FAGOT/FRESCO 2 MAYA 1 CAB 7 COLT 6 MAX/MOOSE	Chi-nan Airfield contains civilian airport facilities serving the province capital. The airfield is connected by taxiway to underground storage and support facilities to the south. The administration area contains training facilities.
2	Chi-nan Airfield East 36-45-00N 117-18-00E	Training/Helicopter	1,067 x 808 -- open sod landing 3,500 x 2,650 field	9 COLT 9 HOUND 3 MAX/MOOSE	
3	Kuo-chuang Airfield 39-59-51N 117-37-25E	Fighter	2,195 x 49 -- NW/SE 7,200 x 160 concrete runway 1,951 x 30 -- NE/SW 6,400 x 100 concrete runway	4 FAGOT/FRESCO 29 FARMER	A taxiway leads past the dispersal area to underground storage and support facilities.
4	Chou-tsun Airfield 36-48-20N 117-53-40E	Training	1,951 (diam) -- open sod landing 6,400 field	39 MAX/MOOSE	
5	Lin-i Airfield East 35-03-09N 118-24-02E	Reserve	411 x 11 -- NE/SW 1,350 x 35 sod runway	None	
6	I-tu Airfield 36-35-40N 118-31-50E	Unknown (see Remarks)	Under construction, no end points determined.	None	I-tu Airfield is under construction near I-tu SSM Training School (). Two tunnels are under construction nearby.
7	Wei-fang Airfield 36-38-50N 119-07-20E	Fighter	1,981 x 79 -- NNW/SSE 6,500 x 260 concrete runway	40 F-9 28 FAGOT/FRESCO 1 COLT	Prior to this was the only airfield in Shantung Province where F-9 aircraft were observed.
8	Chu-cheng Airfield 36-01-50N 119-26-20E	Fighter	2,042 x 58 -- north/south 6,700 x 190 concrete runway	30 FAGOT/FRESCO	
9	Kao-mi Airfield 36-23-10N 119-42-50E	Fighter	2,012 x 61 -- NNW/SSE 6,600 x 200 concrete runway	24 F-9 41 FAGOT/FRESCO	F-9 aircraft were first observed here on photography of ().
10	Chiao-hsien Airfield 26-19-26N 120-01-40E	Fighter	2,012 x 79 -- NNW/SSE 6,600 x 260 concrete runway	41 FAGOT/FRESCO	BEAGLE aircraft have been observed at Chiao-hsien Airfield on previous coverage.
11	Ching-tao Seaplane Station 36-02-55N 120-17-13E	Patrol	Concrete launching ramps to bay	3 COLT (on floats) 6 MADGE	Located on the south side of Ching-tao at the mouth of Chiao-chou Wan (Bay).
12	Ching-tao/Tsang-kou Airfield 36-09-31N 120-23-21E	Transport/helicopter	1,829 x 99 -- NW/SE 6,000 x 325 asphalt runway 1,538 x 98 -- NE/SW 5,050 x 320 prepared surface runway	11 COLT 5 HOUND	Fighter and bomber aircraft have been observed here in the past.
13	Chin-tao/Liu-ting Airfield 36-15-41N 120-22-34E	Fighter	2,225 x 61 -- NNW/SSE 7,300 x 200 concrete runway 914 x 61 -- NE/SW 3,000 x 200 concrete taxiway/runway	13 FAGOT/FRESCO 36 FARMER	
14	Lai-yang Airfield 36-57-44N 120-36-15E	Bomber/Fighter	2,195 x 79 -- NW/SE 7,200 x 250 concrete runway	15 BEAGLE	
15	Yen-tai Airfield Southwest 37-25-30N 121-19-20E	Reserve	2,012 x 30 -- NW/SE 6,600 x 100 concrete runway	None	Yen-tai Airfield Southwest is connected by taxiways to Yen-tai Airfield South and to underground storage and support tunnels in the nearby foothills.
16	Yen-tai Airfield South 37-24-00N 121-22-08E	Fighter	2,134 x 61 -- NE/SW 7,000 x 200 concrete runway	22 FAGOT/FRESCO 36 FARMER	
17	Wen-teng Airfield 37-11-06N 122-13-40E	Fighter	1,981 x 67 -- NE/SW 6,500 x 220 concrete runway	18 FAGOT/FRESCO 14 FARMER	

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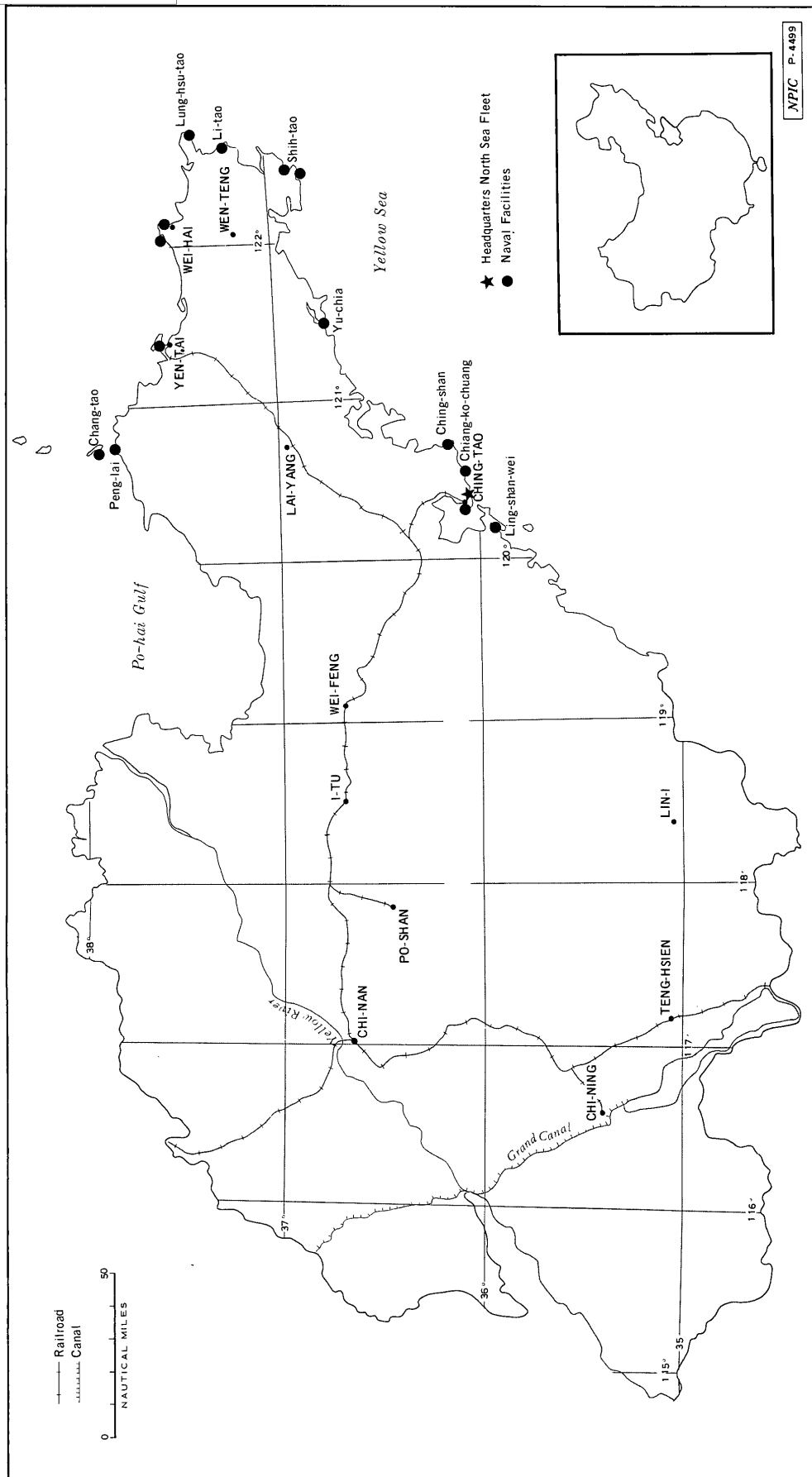
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25X1**Naval Activity (Figure 7)**

17. The coastline of the Shantung Peninsula contains numerous natural anchorages. The center of naval activity in Shantung Province is at Ching-tao, the headquarters of the North Sea Fleet. Smaller facilities are under development at harbors around the peninsula. Figure 7 shows the 14 ports in Shantung Province where naval facilities are located.

18. W and R submarines (SS) were observed at Ching-tao Submarine Base []

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[] and Ching-tao Naval Dockyard []

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[] Probable W/R SS were observed at Chiang-ko-chuang Naval Facility North []

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19. A Gordyy DDGS was observed at Chiang-ko-chuang Naval Facility []

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[], and a Gordyy destroyer (DD) was observed at Ching-tao Naval Base []

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20. The observation of the Gordyy DDGS and two W/R SS at Chiang-ko-chuang Naval Facility and Chiang-ko-chuang Naval Facility North []

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[] indicates that the area (Figure 8) is supporting major North Sea Fleet combatants.

Major construction activity at these facilities and across the bay at Chiang-ko-chuang Naval Facility East [] where a 760-meter- (2,493-foot-)* long water-level

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tunnel is being constructed under a headland suggests that the base area will become increasingly important to the North Sea Fleet when the construction of repair, berthing, and support facilities is completed.

21. New deployment of PTFG was observed at Ling-shan-wei Motor Torpedo Boat Base. Osa PTFG and Huchwan hydrofoil-equipped patrol torpedo boats (PTH) were observed at the facility [] The facility also supports

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22. A Hainan large submarine chaser (PC) was observed at Wei-hai Naval Base and Port Facility []

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The facility normally supports small gunboats. [] Wei-hai Naval Facility North []

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3 nm northwest of Wei-hai, was nearing completion. When

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completed, the facility will have a water-level tunnel []

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23. Major construction activity including the construction of new buildingways and transversers was observed at Ching-tao Shipyard []

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Shih-tao Boatyard []

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Electronics Activity

24. Two electronics facilities in Shantung Province are associated with space and/or SSM tracking (Figure 1). Lai-yang Tracking Facility []

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5.9 nm northeast of Lai-yang, contains optical tracking and radar equipment and a single-leg interferometer.

The newly identified Tzu-po Probable Space Tracking Facility [] situated

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on top of a 580-meter (1,900-foot) ridge 18.5 nm west-southwest of Tzu-po, contains []

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[] pedestal-mounted dish antenna.

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25. The first Suuji-type radar identified on the China coast was observed at Tsai-chia-chuang Air Warning Radar Facility []

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28 nm southeast of Wei-hai, on []

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One Suuji A radar and three other radars occupied four of

the five radar positions at the facility (Figure 9).

Ground Forces Activity (Figure 10)

26. Shantung Province comprises the major portion of the Chi-nan Military Region. Fifty-nine ground forces installations were newly identified. Table 2 (keyed to Figure 10) details the major ground forces activity observed on the January/February 1972 photography.

27. Ground forces weapons were observed at widely dispersed locations throughout the

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province. Most of the sightings were of small numbers of weapons parked at army barracks or deployed in defense of airfields, harbors, or coastal areas. Two large field exercises were observed in progress [redacted] One exercise was at the newly identified Teng-hsien Artillery Training Area [redacted] where elements of a field artillery division including 105 artillery pieces were observed (Figure 11). Another exercise was at an area immediately north of Tung-ping Army Barracks AL 1 [redacted] where elements of an antiaircraft artillery (AAA) division were observed with 112 AAA pieces deployed in villages and fields.

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Industrial Activity

28. The major industrial activity in Shantung Province includes the production of rubber, iron, aluminum, chemicals, and fertilizers; the manufacture of textiles, locomotives, trucks, and agricultural machinery; the mining of coal, iron ore, and bauxite; and the extraction of oil from a large oil field in the Po-hai Basin. Table 3 (keyed to Figure 12) contains the 39 known chemical fertilizer plants in Shantung Province; 36 were newly identified [redacted]

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29. Industrial developments were observed on the January and February photography. Shih-heng Aluminum Plant [redacted] was newly identified in a late stage of construction. Yen-chuang Iron Plant [redacted] was undergoing major expansion, including the addition of a new bank of blast furnaces and hot stoves.

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Underground Construction

30. Continuing construction of passive defenses was observed [redacted] Underground space in caves and tunnels is being provided for storing and servicing military equipment, for housing industrial facilities, and for sheltering personnel.

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31. Four of the 16 operational airfields in Shantung Province have tunnels in which aircraft can be stored and serviced. Tunnels were observed under construction at I-tu Airfield [redacted]

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32. Three underground naval facilities are under construction in Shantung Province: Chiang-ko-chuang Naval Facility East, Wei-hai Naval Facility North [redacted] and Shih-tao Naval Facility PUG [redacted] A fourth facility, Ching-shan PUG Naval Facility, is operational and contains a 642-meter (2,106-foot)* dry tunnel served by a side-haul marine railway capable of handling approximately 37-meter (120-foot) vessels. The facilities under construction at Wei-hai and Chiang-ko-chuang will have sea-level tunnels for storing and servicing naval vessels. At the Shih-tao facility the main tunnel may be excavated deep enough to let sea water in when construction is completed. All the facilities have additional above-water support tunnels.

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33. Approximately one-third of the coastal defense sites in Shantung Province are hardened with tunnels. Yen-tai Cruise Missile Launch Site [redacted] is among the most elaborate with launch positions carved out of cliffs facing the sea. The only access to the positions is through tunnels from a service road on the landward side of the ridge. Storage and support facilities are hardened in additional tunnels along the service road.

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34. Several coastal defense artillery sites have been hardened in a similar fashion. Tunnel-served coastal defense sites were newly observed under construction on the islands at the entrance to the Po-hai Gulf and on the seaward coast of the Shantung Peninsula.

35. Hardened gun positions have been constructed in the inland hills as well as along the coast. Several groups of two-to-four cave- or tunnel-served gun positions were newly observed in the hills in the southeastern portion of the province. Some of these unoccupied artillery sites are integrated with personnel trenching to form small defensive areas.

36. Personnel shelters under construction were newly observed adjacent to several industries and government buildings in Ching-tao and Chi-nan and at Chi-nan Airfield [redacted] near administration buildings. An underground shelter large enough to house a portion of the industrial plant was in the midstage of construction at Ching-tao Arsenal North [redacted] Two hills in Ching-tao have multiple

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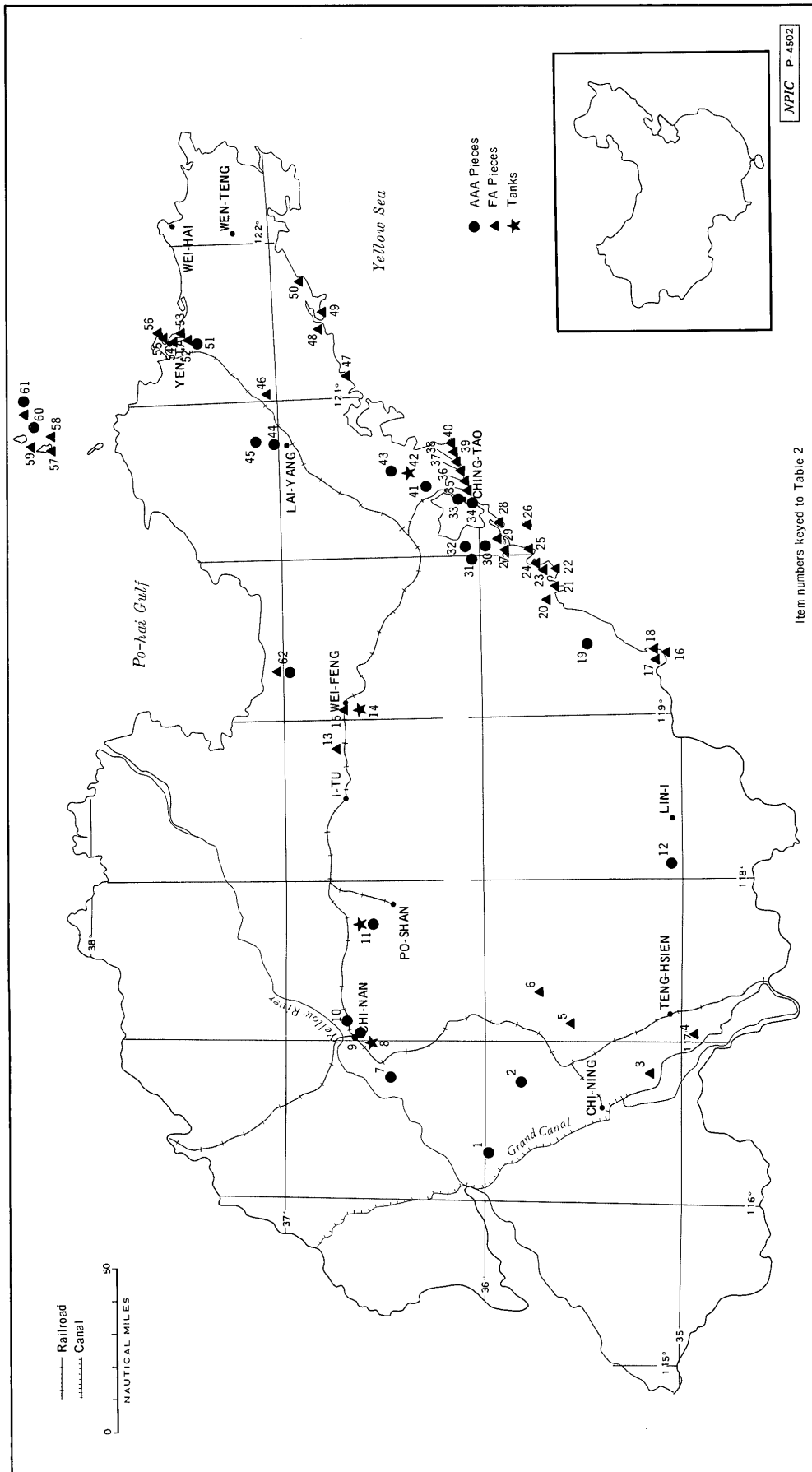
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FIGURE 10. GROUND FORCES ACTIVITY IN SHANTUNG PROVINCE, CHINA

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Table 2. Ground Force Activity in Shantung Province, China
(January - February 1972)

Item No	Description	Location	Armor/Artillery	Location of Weaponry	Item No	Description	Location	Armor/Artillery	Location of weaponry
1	Elements of an AAA division deployed in a field exercise	Directly north of Tung-ping Army Barracks AL 1 [redacted] at 35-56-50N 116-17-40E	112 AAA	Deployed in eight gun batteries in fields and villages. Some were in sites with field-revetted positions.	33	Deployed AAA	Ching-tao Submarine Base [redacted] at 36-05-30N 120-18-46E	9 AAA	Deployed in a site with reverted positions as part of the Ching-tao harbor defenses
2	AAA sighting	Ning-yang Army Barracks North [redacted] at 35-49-48N 116-49-51E	19 AAA	Parked in an exercise field in the barracks area	34	Deployed AAA	Ching-tao Complex [redacted] at 36-04-10N 120-19-20E	32 AAA	Deployed in four eight-gun batteries in sites with reverted positions in the Ching-tao harbor area
3	Elements of a FA division in a field-training exercise (Figure 11)	Teng-hsien Artillery Training Area [redacted] at 35-09-00N 116-57-00E	105 FA	Parked in fields, revetments, and villages in three- and four-gun batteries. Twenty-four FA pieces were engaged in a live-firing exercise. All 37 guns of one regiment were parked together in a field. The 105 FA pieces observed in this exercise were three guns short of the normal complement of guns in three FA regiments.	35	Deployed FA (coastal defense)	Ching-tao AAA Site East [redacted] at 36-03-35N 120-25-10E	4 FA and 7 prob artillery pieces	The FA pieces in bunker-served reverted firing positions. The probable artillery pieces (possible dual-purpose guns) were in reverted firing positions.
4	FA sighting	4 nm west of Lin-cheng at 34-48-00N 117-10-00E	4 FA	Parked near a small building on a levee	36	FA sighting	Shan-tung-tao Coastal Defense Post [redacted] at 36-05-50N 120-26-40E	6 FA	Parked adjacent to a maintenance building
5	FA sighting	Chu-fou Artillery Barracks Area [redacted] at 35-34-50N 117-07-20E	4 prob FA	Parked near the barracks	37	FA sighting	Ching-tao AAA Activity [redacted] at 36-06-25N 120-28-00E	4 FA	Parked in a row near the barracks
6	FA sighting	1.5 nm north of Chu-fou at 35-38-00N 116-59-40E	4 FA	In a small parking area in a large wooded cemetery	38	FA sighting	Shih-liao-jen Coastal Defense Post [redacted] at 36-05-35N 120-29-40E	4 FA	Parked in a row in a small vehicle-parking area
7	Deployed AAA	Chang-ching Army Barracks AL 2 [redacted] at 36-31-40N 118-43-31E	22 AAA	Deployed in one six-gun and two eight-gun batteries in the barracks area	39	FA sighting	Chu-hsien-kung Coastal Defense Post [redacted] at 36-07-15N 120-36-10E	4 FA	Parked adjacent to support buildings
8	Armored-vehicle sighting	Chi-nan Army Barracks SW AL 1 [redacted] at 36-36-28N 116-55-55E	2 tanks	On the driver-training course	40	Deployed FA (coastal defense)	Ao-shan-wei Coastal Defense Site 1 [redacted] at 36-20-08N 120-43-40E	4 FA and 4 prob FA	In reverted firing positions facing the Yellow Sea
9	AAA sighting	Chi-nan Army Barracks AL 12 [redacted] at 36-41-10N 117-04-55E	18 AAA (prob 57 mm)	Parked in the barracks area	41	Deployed AAA	Ching-tao/Lui-tung Airfield [redacted] at 36-15-41N 120-22-34E	24 AAA	Deployed in three eight-gun batteries. One battery was in a site with eight reverted positions. The other two batteries were deployed among the revetments of old four-position sites.
10	AAA sighting	Chi-nan Army Barracks East [redacted] at 36-42-17N 117-08-42E	30 57mm AAA	Parked in a vehicle park in the barracks area	42	Armored-vehicle sighting	Cheng-yang Army Barracks AL 8 [redacted] at 36-17-50N 120-26-50E	3 prob tanks	Parked in the barracks area near grass racks.
11	Armored-vehicle sighting	Wang-tung Army Barracks [redacted] at 36-39-25N 117-40-20E	3 AAA and 6 type-59 tanks	The tanks were parked in the newly identified barracks area.	43	Deployed AAA	Chi-mo Army Barracks AL 3 [redacted] at 36-27-05N 120-31-05E	18 AAA and 18 prob AAA	The 18 AAA pieces were in three six-position sites immediately south of the barracks area. The 18 probable AAA pieces were parked in rows in the barracks area.
12	AAA sighting	Chu-chun Army Barracks SE AL 2 [redacted] at 34-06-00N 118-18-05E	18 AAA and 9 prob AAA	Parked in a field near the barracks area	44	Deployed AAA	Lui-yang Army Barracks AL 1 [redacted] at 37-06-48N 120-42-00E	6 AAA	In a site near the barracks
13	FA sighting	Chang-lo Army Barracks AL 2 [redacted] at 36-39-36N 118-51-56E	6 FA	Parked in the barracks area	45	Deployed AAA	Chi-hsiao Air Warning Radar Facility [redacted] at 37-13-30N 120-44-75E	12 prob AAA	Deployed in a near-by support area
14	Armored vehicle sighting	Wei-fang Army Barracks WSW AL 1 [redacted] at 36-41-10N 119-02-50E	21 tanks	Parked in the barracks area	46	FA sighting	Tao-tsun Army Barracks NW [redacted] at 37-14-35N 121-06-05E	8 prob FA	Parked in the barracks area
15	FA sighting	Lui-chia-cheng Army Barracks AL 1 [redacted] at 36-41-10N 118-58-10E	24 FA and 31 prob FA	Parked in the barracks area	47	FA sighting	Chui-hai-yang Military Barracks Area [redacted] at 36-42-20N 121-14-45E	4 FA	Parked in the barracks area
16	Deployed FA (coastal defense)	An-tung-wei Coastal Defense Site Lan-shan-tou [redacted] at 35-06-30N 119-21-30E	4 FA	In four open firing positions on a hillside facing the Yellow Sea. A possible tunnel entrance was near the gun positions.	48	FA sighting	Hsin-chia Coastal Defense Site [redacted] at 36-45-40N 121-26-20E	4 FA	In a small vehicle park near the barracks
17	FA sighting	An-tung-wei Coastal Defense Post [redacted] at 36-07-25N 119-28-25E	3 FA	Parked in a row near a small probable vehicle-storage building	49	Deployed FA (coastal defense)	Huang-tao Coastal Defense Post [redacted] at 36-43-15N 121-36-55E	4 FA	In open firing positions on the south side of Huang Tao (Island)
18	FA sighting	An-tung-wei Coastal Defense Post Hancha-yung-tou [redacted] at 35-11-00N 119-21-45E	6 FA	Parked in a row near a possible vehicle-storage shed	50	FA sighting	Huang-tao Coastal Defense Post [redacted] at 36-53-10N 121-45-40E	4 FA	In a small vehicle park adjacent to the barracks
19	AAA sighting	Jih-chao Army Barracks WNW AL 1 [redacted] at 35-25-54N 119-25-40E	6 AAA	Parked in the barracks area	51	Deployed AAA	Yen-tai Airfield South [redacted] at 37-24-00N 121-22-08E	24 AAA	In reverted positions in three eight-position sites
20	FA sighting	Wang-chia-tan Coastal Defense Post [redacted] at 35-37-00N 119-39-55E	6 FA	Parked in a row in a parking area near two storage buildings	52	FA sighting	Yen-tai Army Barracks South AL 3 [redacted] at 37-30-55N 121-22-20E	6 FA	Parked in the barracks area
21	FA sighting	Yao-tou Army Barracks AL 1 [redacted] at 35-36-45N 119-40-40E	3 FA	Parked in the barracks area	53	FA sighting	4.5 nm SE of Yen-tai at 37-28-50N 121-26-25E	6 FA	Parked near support buildings
22	FA sighting	Po-eh Army Barracks SE AL 1 [redacted] at 35-37-50N 119-53-10E	2 FA	In a small vehicle park adjacent to the barracks	54	FA sighting	4 nm SE of Yen-tai at 37-28-20N 121-26-25E	4 FA	Parked near support buildings
23	FA sighting	Ting-chia-wei Coastal Defense Site [redacted] at 35-38-55N 119-54-10E	2 prob FA	Parked in a support area	55	Deployed FA (coastal defense)	Kung-tung-tao Coastal Defense Site 2 [redacted] at 37-33-45N 121-30-30E	4 prob FA	In four masonry reverted firing positions on top of a ridge on the northwest side of Kung-tung Tao (Island). Two cave entrances are in the cliff below the gun positions.
24	FA sighting	Nan-chai Army Barracks SE [redacted] at 35-42-40N 119-54-49E	3 FA	Parked in the barracks area	56	Deployed FA (coastal defense)	Kung-tung-tao Coastal Defense Site 1 [redacted] at 37-33-50N 121-30-50E	2 FA (130 mm)	In open firing positions at the southwest tip of Kung-tung Tao (Island)
25	FA sighting	Yu-chih Coastal Defense Post [redacted] at 35-44-55N 119-59-50E	4 FA	Parked in a row adjacent to the barracks	57	Deployed FA (coastal defense)	To-chi-tao Coastal Defense Site [redacted] at 38-09-45N 120-46-40E	4 FA	In firing positions on a hillside at the eastern tip of To-chi Tao (Island). The firing positions are served by tunnels and a service road.
26	Deployed FA (coastal defense)	Shui-ling-shan-tao Coastal Defense Site West [redacted] at 35-45-40N 120-09-20E	4 FA	In two two-gun open firing positions on the west side of Shui-ling-shan Tao (Island) facing the mainland	58	Deployed FA (coastal defense)	To-chi-tao Coastal Defense Site 2 [redacted] at 38-10-05N 120-44-40E	4 FA	In open firing positions on a hillside on To-chi Tao (Island). Tunnel entrances facing the hill behind each position, and corresponding tunnel entrances are along a service road on the opposite slope.
27	FA sighting	Tian-wang-chia Army Barracks SE AL 1 [redacted] at 35-49-20N 120-00-50E	4 FA	Parked in a row adjacent to a barracks	59	Deployed FA (coastal defense)	Pei-cheng-huang-tao Coastal Defense Site [redacted] at 38-24-00N 120-54-40E	4 FA	In firing positions on a hillside at the northern tip of Pei-cheng-huang Tao (Island). Each position is served by a tunnel or a cave.
28	FA sighting	Yu-ming-tai Army Barracks AL 1 [redacted] at 35-54-35N	4 FA	Parked in a row adjacent to a support building	60	Deployed AAA	Nan-cheng-huang-tao Air Warning Radar Facility [redacted] at 38-21-35N 120-54-20E	6 AAA	Deployed in a site near the radar facility
29	FA sighting	Ling-shan-wei Coastal Defense Post [redacted] at 35-55-50N 120-07-45E	6 FA	Parked in a courtyard adjacent to a vehicle storage shed	61	Deployed AAA and FA (coastal defense)	Pei-cheng-huang-tao Coastal Defense Site [redacted] at 38-23-20N 120-55-20E	2 prob FA and 6 AAA	In firing positions. The AAA pieces were deployed in a nearby battery.
30	AAA sighting	Ling-shan-wei Army Barracks West [redacted] at 35-55-58N 120-07-01E	6 AAA	Parked in the barracks area	62	Artillery sighting	Chang-i Prob Artillery Division Area [redacted] at 37-00-00N 119-18-40E	83 FA, 4 prob FA, 24 AAA, and 12 prob AAA	Elements of a probable artillery division were parked in three widely separated probable artillery regional areas and one probable AAA regional area in the newly identified Chang-i Probable Artillery Division area. Most of the artillery was in four-gun batteries.
31	AAA sighting	Wang-tai Army Barracks South AL 1 [redacted] at 36-01-20N 119-59-00E	18 prob AAA	Parked in the barracks area					
32	AAA sighting	Wang-tai Army Barracks SE AL 2 [redacted] at 36-03-36N 120-02-00E	18 prob AAA	Parked in the barracks area					

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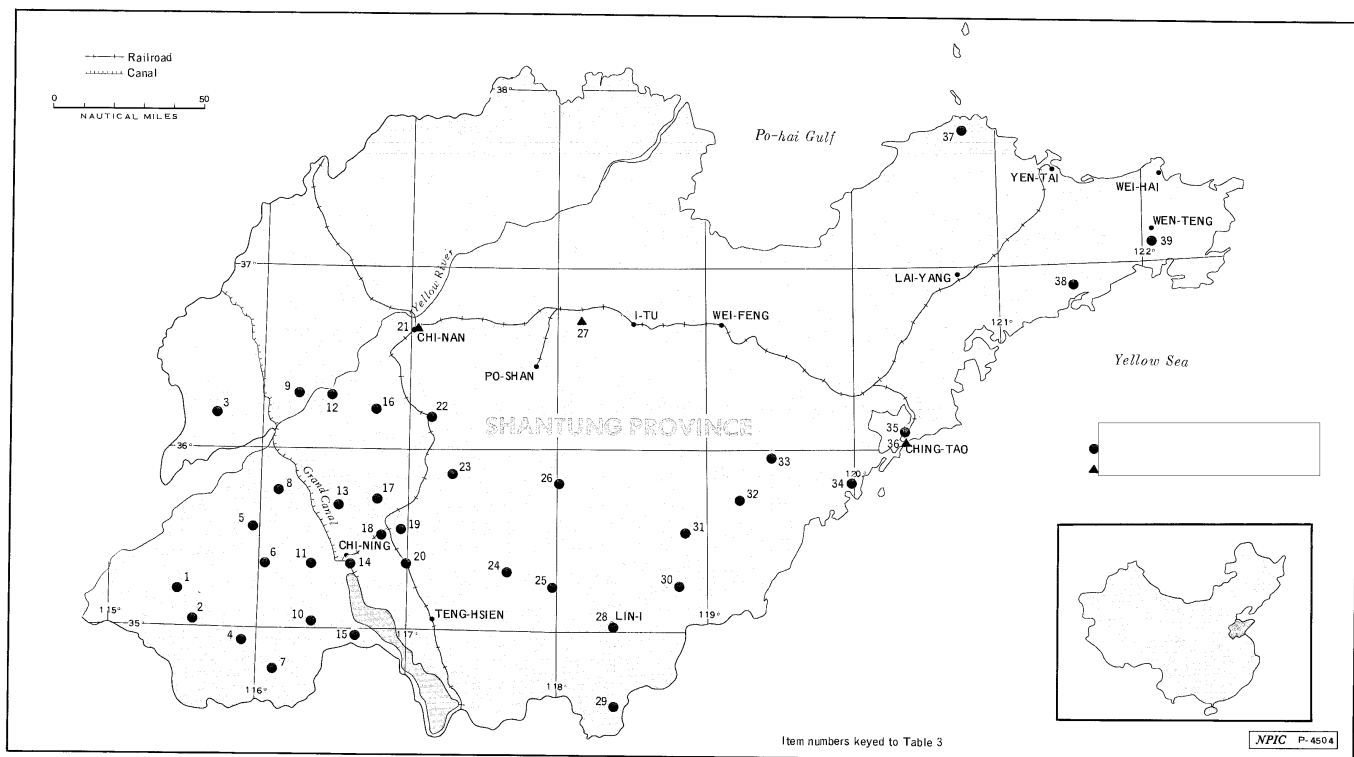


FIGURE 12. CHEMICAL FERTILIZER PLANTS IN SHANTUNG PROVINCE, CHINA

Table 3. Chemical Fertilizer Plants in Shantung Province, China
(January - February 1972)

Item No	Installation	Geographic Coordinates	Item No	Installation	Geographic Coordinates
1	Ho-tse Chemical Fertilizer Plant	35-14-10N 115-27-30E	21	Chi-nan Nitrogen Fertilizer Plant	36-43-21N 117-09-33E
2	Ting-tao Chemical Fertilizer Plant	35-07-50N 115-32-20E	22	Tai-an Chemical Fertilizer Plant	36-11-01N 117-07-51E
3	Hsin-hsien Chemical Fertilizer Plant	36-13-52N 115-39-57E	23	Lou-te-chen Chemical Fertilizer Plant	35-50-56N 117-18-31E
4	Cheng-wu Chemical Fertilizer Plant	35-58-20N 115-53-50E	24	Yuan-ku Chemical Fertilizer Plant	35-27-47N 117-44-02E
5	Yun-cheng Chemical Fertilizer Plant	35-39-30N 115-56-40E	25	Pi-hsien Chemical Fertilizer Plant	35-15-50N 117-59-30E
6	Chu-yen Chemical Fertilizer Plant	35-22-10N 116-03-30E	26	Hsia-chuang Chemical Fertilizer Plant	35-51-00N 118-01-30E
7	Shan-hsien Chemical Fertilizer Plant	34-46-40N 116-04-10E	27	Wang-chu-chuang Nitrogen Fertilizer Plant	36-45-15N 118-15-30E
8	Liang-shan Chemical Fertilizer Plant	35-48-58N 116-05-19E	28	Lin-i Chemical Fertilizer Plant	34-58-50N 118-19-20E
9	Tung-a Chemical Fertilizer Plant	36-20-40N 116-14-50E	29	Tan-cheng Chemical Fertilizer Plant	34-37-40N 118-19-50E
10	Chin-hsien Chemical Fertilizer Plant	35-05-00N 116-17-40E	30	Chu-hsien Chemical Fertilizer Plant	35-12-35N 118-50-50E
11	Chia-hsien Probable Chemical Fertilizer Plant	35-22-40N 116-19-20E	31	Chi-kou Chemical Fertilizer Plant	35-36-20N 118-50-20E
12	Ping-yin Chemical Fertilizer Plant	36-15-22N 116-25-48E	32	Chu-cheng Chemical Fertilizer Plant	35-46-50N 119-11-45E
13	Wen-shang Chemical Fertilizer Plant	35-42-48N 116-28-58E	33	Wang-ko-chuang Chemical Fertilizer Plant	35-59-45N 119-23-10E
14	Chi-ning Chemical Fertilizer Plant	35-22-50N 116-34-30E	34	Ching-tao Chemical Fertilizer Plant	35-52-10N 119-58-41E
15	Ku-ting-chen Chemical Fertilizer Plant	34-59-20N 116-37-30E	35	Ta-tien Chemical Fertilizer Plant	36-13-02N 120-22-20E
16	Fei-cheng Chemical Fertilizer Plant	36-12-34N 116-46-07E	36	Peng-lai Chemical Fertilizer Plant	36-12-10N 120-22-40E
17	Ning-yang Chemical Fertilizer Plant	35-44-55N 116-47-20E	37	Hsia-tsun Chemical Fertilizer Plant	37-48-20N 120-47-20E
18	Tzu-yang Chemical Fertilizer Plant	35-34-32N 116-48-06E	38	Wen-teng Chemical Fertilizer Plant	36-55-05N 121-30-35E
19	Chu-fou Chemical Fertilizer Plant	35-36-18N 116-58-05E	39		37-11-05N 122-02-10E
20	Tsou-hsien Chemical Fertilizer Plant	35-23-40N 116-59-10E			

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tunnel entrances, but their function is still undetermined.

37. Underground storage in caves and tunnels is common throughout Shantung Province. At least 30 cave entrances at four separate storage areas in mountain valleys were newly observed at Tsao-chuang Supply Depot LL 1 () 25X1

REFERENCES

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MAPS OR CHARTS

ACIC. Series ONC, Sheets G-9 and G-10, scale 1:1,000,000

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